

# THE PERSUASIVENESS OF ONLINE SAFETY CUES: THE IMPACT OF PREVENTION FOCUS COMPATIBILITY OF WEB CONTENT ON CONSUMERS' RISK PERCEPTIONS, ATTITUDES, AND INTENTIONS

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**S**afety cues are frequently used in online stores to relieve consumers' risk perceptions concerning online purchases. This paper uses regulatory focus theory (RFT) to predict the persuasiveness of online safety cues. According to RFT (Higgins, 1997), people process information differently depending on whether they strive for achieving gains (promotion focus) or avoiding losses (prevention focus). The aim of the present study is to examine the impact of the regulatory focus compatibility of Web content on online consumer behavior. Using different online stores, two experiments show that the effect of online safety cues depends on the consumers' regulatory focus. A pilot study demonstrates that safety-oriented Web content lowers consumers' risk perceptions, but only when in a prevention focus. The main study replicates and extends this finding by showing that online safety cues both lower consumers' risk perceptions and engender more favorable attitudes and intentions, depending on the regulatory focus.

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## INTRODUCTION

Online stores employ numerous safety cues to persuade us to make an online purchase. During the online purchase process we come along and click through safety indicators such as privacy policies, product warranties, and customer reviews. Everyone who has ever made an online purchase is familiar with all these cues, because Web designers and online retailers extensively use logos, marks, seals, and signs of these safety and security indicators. Do these safety cues persuade us? Do these cues work as risk relievers and lower our perception of potential risks of online shopping? Will these safety cues result in favorable attitudes toward the site and toward the online retailer and increase our online purchases? Does the persuasiveness of these safety cues depend on consumer goals and are they thus more effective when adapted to specific consumer needs? The studies presented in this paper address these questions. In the following section, recent research on risk perception in the online shopping environment is briefly discussed. Next, studies on consumers' risk reduction strategies and regulatory focus theory in consumer behavior are presented and integrated in order to predict the persuasiveness of online safety cues. Finally, the results of two experiments are presented that test the persuasiveness of online safety cues on consumer behavior and the moderating role of consumers' regulatory focus.

The commercial use of the Internet is still increasing, and online shopping more and more becomes a part of our day-to-day life. Despite an increase in the volume of online sales, considerations regarding safety and risk still form an impediment to shopping in an online environment (e.g., Miyazaki & Fernandez, 2001; Pavlou, 2003). Risk perceptions are one of the most important determinants of online purchase behavior, occurring on several dimensions, among which the most prevalent are financial, product performance, psychological, and time/convenience losses (e.g., Forsythe, Liu, Shannon, & Gardner, 2006; Forsythe & Shi, 2003; Liebermann & Stahevsky, 2002). Typical risks associated with online shopping are credit card fraud, delayed delivery or no delivery at all, perceived lack of guarantees, and unexpected shipping charges. In sum, risk perceptions impede online shopping and hold consumers back from online purchases.

To counter the perceived risky nature of any shopping environment, retailers can offer safety cues, informational symbols present on the Web site that provide assurance concerning the safety of the online shop, the payment, or the product. Examples of such safety cues include money-back guarantees, safe payment, and product warranties. The reliance on safety cues is one of the risk-relieving strategies consumers can adopt to allay the feelings of risk. Other risk relievers include brand loyalty and product comparison (Derbaix, 1983). Earlier research showed that the reliance on such risk relievers affects actual buying behavior (e.g., Dowling & Staelin, 1994) and that risk relievers can reduce consumers' risk perception in in-store shopping contexts (e.g., Shimp & Bearden, 1982). So far, studies on the effectiveness of risk relievers have been mainly devoted to offline shopping contexts, one example being the study by Akaah and Korgaonkar (1988), in which the relative importance of risk relievers in direct-mail shopping was demonstrated. Since online shopping is perceived as more risky than in-store shopping (e.g., van den Poel & Leunis, 1999; van Noort, Kerkhof, & Fennis, 2007), understanding the persuasiveness of risk relievers in online shopping contexts is crucial for Internet marketers and creates a better understanding of online consumer behavior in general. Although risk relievers are used extensively in online stores, to date, little empirical evidence has been produced on the effectiveness of risk relievers in the online shopping environment. However, research by Tan (1999) and van den Poel and Leunis (1999) examined the relative importance of risk relievers in online versus in-store shopping contexts. Findings indicate that such risk relievers as a well-known brand or warranties can stimulate the use of Internet as a shopping channel. These findings are in line with the findings of Lwin and Williams (2006), which suggest that Web site warranties can make a positive difference for online retailers with strong reputations with respect to perceived risk, perceived product quality, and purchase intentions. Other studies (Yoon, 2002; Yousafzai, Pallister, & Foxall, 2005) demonstrated that safety features on a Web site such as warranty phrases and privacy policies (i.e., all cues that try to assure the safety of the online store, payment, and product) increase consumers' trust. These studies indicate that safety cues as a specific type of risk reliever are an important aspect of the online shopping environment in persuading consumers to buy online. In the present research it is proposed

that the persuasiveness of safety cues depends on the consumer's goals in the online shopping environment. It is expected that safety cues tailored to the specific needs of online consumers are more persuasive, in terms of lowering risk perception, creating favorable attitudes and behavioral intentions.

The aim of this paper is to predict consumers' risk perceptions, attitudes, and behavioral intentions in reaction to online safety cues by applying regulatory focus theory (RFT; Higgins, 1997), since prior research showed that an online shopping environment affects consumers' regulatory focus (van Noort, Kerkhof, & Fennis, 2007). Higgins' RFT states that a different psychological system operates when the goal is avoiding losses rather than achieving gains. Promotion-focused self-regulation is typically concerned with the absence or presence of positive outcomes and with advancement and accomplishment, whereas prevention-focused self-regulation is typically concerned with the absence or presence of negative outcomes and with safety and responsibility. RFT proposes that self-regulation influences consumer behavior, which includes cognitive, motivational, and behavioral components.

According to RFT, in terms of information processing, it makes a difference whether people strive for achieving gains (promotion focus) or avoiding losses (prevention focus). Pham and Avnet (2004) tested this notion and showed that reliance on substantive versus affective ad information depends on one's regulatory focus. Promotion-focused individuals were more influenced by the attractiveness of an ad, while prevention-focused individuals were more persuaded by substantive information. Accordingly, regulatory focus influences which information an individual deliberately seeks or which information attracts attention.

Regulatory fit (Higgins, 2000) occurs when an individual's regulatory focus and the type of information processed are compatible. Individuals in a prevention focus are more attentive to informational aspects that appeal to their needs to fulfill duties and responsibilities and that address safety and security needs. Promotion-focused individuals will be more receptive to informational aspects that fulfill their ideal goals and address advancement and achievement. Accordingly,

Aaker and Lee (2001, Experiment 1) showed that compatibility of ad content and consumer regulatory focus positively influenced brand attitudes and the perceived effectiveness of the ad. Depending on their regulatory focus, individuals were more persuaded by an advertisement that was related either to promotion-focused benefits (e.g., energy creation of juice) or to prevention-focused benefits (e.g., cancer and heart disease prevention of juice). In line with these findings, Chernev (2004) showed that regulatory focus compatibility of product attributes positively affects product evaluations. Attributes compatible with the regulatory focus tend to be overweighted in choice. Prevention-focused consumers are more receptive to utilitarian, reliability-related, and unattractive attributes, whereas promotion-focused consumers are more receptive to hedonic, performance-related, and attractive product attributes. In sum, regulatory focus determines what information is important for consumers. Hence, applying the principle of regulatory fit to the field of online consumer behavior may help to understand individuals' behavior in response to safety cues within an online shopping environment. In line with Pham and Higgins' (2005) proposition that a prevention focus fosters a preferential search for information related to security and protection, it is expected that for prevention-focused consumers safety cues are more important than for promotion-focused consumers. As a consequence, consumers' active regulatory focus moderates the impact of online safety cues.

The aim of the current study is to examine the impact of the regulatory focus compatibility of Web content on consumer risk perceptions and attitudes. Since earlier research showed that an online shopping environment through its risky nature induces a prevention focus (van Noort, Kerkhof, & Fennis, 2007), this paper concentrates on the consequences of this prevention focus within the online shopping context. It is predicted that an online shopping environment containing safety cues fits a prevention focus and therefore will positively influence prevention-focused consumers' risk perceptions and attitudes. The hypotheses are that Web content compatible with the consumers' prevention focus will both lower the levels of the perceived risk of online purchases and engender more favorable attitudes and behavioral intentions.

The present research contributes to the literature in several key ways. First, the main body of online consumer behavior research has focused on examining antecedents of online shopping adoption by examining the relative benefits of the shopping channel. This research has identified that online shopping goals (e.g., time saving) differ from shopping goals in conventional shopping formats (e.g., social interaction; Alba et al., 1997). However, as yet, research has failed to examine whether these different goals are consequential during the online shopping process. The present research suggests that they are. In particular, the present research examines the consequences for the online shopping process by studying the role of regulatory goals in the persuasiveness of online safety cues. Of course, this is only one possible consequence, since regulatory goals might also affect the type of Web sites consumers visit, the type of information that consumers search for on the Internet, the type of products that are purchased online, and so on. Nevertheless, by examining the effects on the persuasiveness of online safety cues, this paper shows that in theorizing about online consumer behavior, it is important to employ a self-regulation perspective.

Second, this research contributes to our understanding of the role of risk perception in online consumer behavior. Prior research extensively studied online risk perceptions as an independent variable that influences consumers' choice behavior between offline and online shopping environments; the current research is based on the assumption that online risk perceptions are consequential for self-regulatory goals, examining how these goals are consequential for online consumer behavior.

The hypotheses are tested in two experimental studies. For reasons of generalizability, Web content of two different online stores is used. In a pilot study, the basic idea is tested that online safety cues are more important for prevention-focused (vs. promotion-focused) individuals, using self-report measures of risk perception. These effects were tested using the Web site of a fictitious travel agency. The aim of the main study was to replicate the findings in the pilot study and to further corroborate these findings. First, in the main study a different Web site was used (i.e., an online music store). Second, a pre-test was conducted to create a more thorough manipulation of the

stimulus materials for the Web sites. Third, we tested whether Web content compatibility with prevention focus also affects other types of consumer responses to extend the findings of the pilot. More specifically, the dependent variables in this experiment were risk perception, multiple attitude measures, including attitude toward the Web site, attitude towards the online retailer, and behavioral intentions. Furthermore, in the second experiment, several individual characteristics related to online behavior were assessed, because a number of studies have shown that differences in prior online purchase behavior, educational level, Internet access, and frequency of Internet usage may affect online consumer behavior (e.g., Brown, Pope, & Voges, 2003; Chiang & Dholakia, 2003; Crisp, Jarvenpaa, & Todd, 1997; Sääksjärvi & Samiee, 2007; Swinyard & Smith, 2003).

## PILOT STUDY

As a first preliminary test to assess whether online content could differentially affect consumer responses as a function of prevention focus, a pilot study was conducted. This pilot used a 2 (regulatory focus: promotion vs. prevention)  $\times$  2 (Web content: safety cues vs. non-safety cues) between subjects factorial design to test the effects on risk perception. A total of 94 participants (34% male;  $M_{age} = 30$ ,  $SD = 10.54$ ) was randomly assigned to these conditions.

Following a well-established procedure developed by Higgins and his colleagues (Higgins et al., 1994), participants were instructed to write down either their main hopes and aspirations and how these changed over time (i.e., inducing a promotion focus) or their main duties and obligations and how these changed over time (i.e., inducing a prevention focus). Next, participants were instructed to carefully inspect a Web site that contained either safety or non-safety cues. The Web sites showed the homepage of a fictitious online travel agency with a standard layout. The upper part of the homepage consisted of a bar with the logo and the name of the agency, a picture of a palm tree, some standard hyperlinks (e.g., home, destinations, search, book, newsletter); the center of the homepage presented an introduction about the organization, the Web site, and the type of holidays that they offer. Only the lower part, where (non)safety cues were presented, differed between conditions.

**TABLE 1**

Hyperlinks and Symbols Used as (Non-)Safety Cues in the Pilot and Main Study

	PILOT STUDY (TRAVEL AGENCY)		MAIN STUDY (MUSIC STORE)	
	SAFETY	NON-SAFETY	SAFETY	NON-SAFETY
Hyperlinks	Privacy policy General terms and conditions	Copyrights Useful links	Help General terms and conditions Delivery status Warranty policy Customer reviews	Special offers Price comparison New arrivals Gift guide Cheap offers
Symbols	Money back guarantee Highly secured payments system Home shopping warranty	Early bird discount Pay now save 10% Cheapest offer	Money back guarantee Quality guarantee Home shopping warranty Safety warranty	Discount Lowest price guarantee Add to shopping cart Buy 3 pay 2

Cues that appeal to the feeling of safety and security, like “money-back guarantee” and “highly secured payment system” were used for the prevention-compatible Web site, resulting in a Web site with safety cues. The purpose was to create Web sites that contained an equal amount of information; therefore, in the non-safety condition the safety cues were replaced with cues that appeal more to the feeling of achievement and advancement (i.e., promotion-related and hence incompatible with a prevention focus; see Table 1 for a listing of the cues). A fictitious online travel agency was used for the Web site because holiday trips are commonly purchased online. Using a fictitious online retailer avoids issues concerning the existing reputation, brand awareness, and familiarity with the brand. To enhance external validity, the Web design was based on an actual Web site of a travel agency, using cues that are commonly used on the Internet.

To check whether prevention-compatible (i.e., safety cues) and prevention-incompatible (i.e., non-safety cues) Web content was successfully manipulated, we used a measure tapping the extent to which the safety cues on the website evoked a general perception of safety. More specifically, participants were asked to rate whether the Web site convinced them that a booking with the online travel agency was safe (1 = totally disagree, 5 = totally agree).

Next, more specific risk perceptions were assessed to test the interaction effects of prevention-(in)compatible Web content and regulatory focus. In line with Featherman and Pavlou (2003), risk perception is defined as a potential loss in the pursuit of a purchase using the Web site of an online retailer. Potential losses may occur on several dimensions; therefore, risk perception was assessed with 9 items ( $\alpha = 0.78$ ), covering the most important online risk perception facets as identified by Jarvenpaa and Todd (1997), Kerkhof, Lapaix, and Caljé (2005), and Featherman and Pavlou (2003; i.e, privacy, performance, economic, and personal risks). More specifically, participants were asked to estimate the chance that a certain loss will emerge. All items started with “If I consider to book a holiday trip with this online agency, . . .,” followed by several purchase risks, for example, “unexpected delivery costs” and “unauthorized third-parties can access my credit card information.” Items were rated on a 5-point scale ranging from 1 (totally disagree) to 5 (totally agree).

**Results**

Seven participants did not correctly follow instructions to complete the online questionnaire; therefore, these participants were excluded from further analyses. (Including these participants did not substantially affect the results.) Analysis of variance showed that, as

**TABLE 2**

Mean Scores and Standard Deviations on Risk Perception as a Function of Regulatory Focus and Web Content (Pilot Study)

	PREVENTION		PROMOTION	
	SAFETY	NON-SAFETY	SAFETY	NON-SAFETY
Risk perception	2.47 <sub>a</sub>	3.07 <sub>b</sub>	2.82 <sub>a</sub>	2.80 <sub>a</sub>
SD	0.79	0.56	0.71	0.66

Note: Means with a different subscript (for each regulatory focus condition) differ significantly from each other at the 0.01 level. Safety = Web content with safety cues. Non-safety = Web content with non-safety cues.

intended, the Web site containing safety cues was perceived as more safe than the Web site with non-safety cues [ $M_{\text{safety}} = 3.69$ ,  $SD = 0.60$  vs.  $M_{\text{non-safety}} = 3.16$ ,  $SD = 0.77$ ;  $F(1,85) = 12.92$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.13$ ].

To test whether Web content that fits consumers' prevention focus reduces consumers' risk perceptions, a regulatory focus (promotion vs. prevention) by Web content (safety cues vs. non-safety cues) ANOVA was assessed, with the mean score on the risk perception scale as the dependent variable. This analysis showed a main effect for Web content [ $F(1,83) = 4.99$ ,  $p = 0.03$ ,  $\eta_p^2 = 0.06$ ]. Inspection of the means revealed that participants in the safety condition experienced lower levels of risk. (See Table 2 for a listing of the means and standard deviations.) More important, this effect was qualified by the expected interaction effect between regulatory focus and Web content [ $F(1,83) = 5.91$ ,  $p < 0.05$ ,  $\eta_p^2 = 0.08$ ]. Simple effects analysis revealed that the impact of safety cues was significant for participants in the prevention focus [ $F(1,83) = 10.73$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.11$ ], but not for participants in the promotion focus condition [ $F(1,83) < 1$ ].

### Summary and Discussion

Consistent with the predictions, the results show that Web content compatible with a prevention focus engenders lower levels of risk perception in an online store for prevention-focused consumers. The main study replicates and extends this result by using a more thorough manipulation of prevention-compatible and -incompatible online cues by conducting a pre-test

on online informational cues. Furthermore, to increase the generalizability of the outcomes of the current studies, a Web site for another product category was used. Moreover, this study extends the findings in the pilot by measuring risk perception, multiple attitudinal measures, and behavioral intentions to examine whether the evaluation of a Web site can be influenced by the prevention focus compatibility of the Web content. If the Web content matches the prevention focus, a more favorable evaluation of the Web site should result and people should be more willing to use the Web site in the future to conduct purchases. Furthermore, measuring differences in Internet access, frequency of Internet usage, prior online purchase behavior, online purchase frequency, and educational level enabled assessment of whether the hypothesized effects still hold when controlling for differences related to online (shopping) behavior.

## MAIN STUDY

### Method

**Participants.** A total of 124 participants participated in this study (46% male), with a mean age of 32.72 ( $SD = 11.14$ ). As in the pilot study, the participants were approached by e-mail to volunteer in a study on online shopping. The e-mail contained a link to one of the experimental conditions.

**Design and Procedure.** The design was similar to the pilot study, but this time a Web site for a fictitious online music store was used. To extend the findings of the pilot study, scales were added assessing consumer attitudes toward the Web site and the online retailer, behavioral intentions, and several differences between participants concerning online behavior.

**Stimulus Materials.** As in the pilot study, a homepage of a Web site was created to test the effects of safety cues. In the present research, we created a homepage of a fictitious online music store. The upper part of the homepage consisted of a bar with the logo and the name of the store. The right central part gave a general description of the Web site and the store, and the lower part presented logos of payment options. Between conditions (safety vs. non-safety), both the hyperlink menu (in the left central part) and the symbols (right above the logos of the payment options) were varied.

**Pre-Test.** Among 41 students (46% male), more than 33 online cues (i.e., hyperlinks and symbols) were pre-tested on their compatibility with the feeling of safety and security (i.e., compatibility with prevention). Participants were instructed to read the descriptions of two discrete feelings, referring either to prevention or to promotion. The prevention feeling was described as a feeling of quiescence (i.e., calm, relaxed), concerned with safety, security, trust, and reliability, while the promotion feeling was described as a cheerful feeling, concerned with luxury, achievement, advancement and aspirations (Higgins, Shah, & Friedman, 1997). Next, participants had to evaluate several online cues (33 in total, including symbols and hyperlinks) commonly used on (music store) Web sites by rating to what extent the cues evoked the prevention and the promotion feeling. So participants had to rate each cue twice, on both a prevention- and a promotion-feeling scale. Items were rated on a 5-point scale (1 = totally not evokes the feeling, 5 = completely evokes the feeling). Using *t*-statistics for each cue, we analyzed the difference between the prevention score and the promotion score. For the prevention-compatible Web site, the cues with a mean score of 3 or higher on the prevention scale were used that significantly differed from the score on the promotion scale, resulting in a Web site with safety cues (e.g., money-back guarantee symbol, warranty policy hyperlink). For the prevention-incompatible Web site, the cues with a mean score of 3 or higher on the promotion scale were used that significantly differed from the score on the prevention scale, resulting in a Web site with non-safety cues (e.g., new arrivals hyperlink, discount symbol; see Table 1 for a listing of the used cues).

### **Dependent Measures**

**Manipulation Checks.** In this study, three items were used to check whether the Web content was successfully manipulated. First, participants were asked to rate whether the Web site had convinced them that making a purchase with this online retailer was safe (1 = totally disagree, 5 = totally agree). Next, participants were asked to rate on a 5-point semantic differential scale to what extent the Web site was (1) risky-secure and (2) unprotected/protected.

**Risk Perception.** Risk perception was assessed using the same items as in the pilot study ( $\alpha = 0.90$ ).

**Attitude Toward the Web Site.** Attitude toward the Web site was assessed with two scales. First, six

items measured the general attitude toward the Web site, composed of the affective and cognitive components of attitude. Sample items included "I would feel comfortable when surfing on this website," "this website gives me a positive feeling," and "my evaluation of this website is positive" ( $\alpha = 0.97$ ). These items were rated on a 5-point scale ranging from "totally disagree" to "totally agree" and the mean score on these items was used as a dependent variable in the analyses. Second, we used a concise version of the attitude toward the site scale created by Chen and Wells (1999). They created this scale especially to measure attitude on dimensions that are unique for and/or important to Web content (i.e., entertainment, informativeness, and organization). Participants were asked to rate to what extent six adjectives were applicable to the Web site, using a 5-points scale that ranged from "not at all applies" to "very much applies." Sample items include imaginative, informative, and well-ordered ( $\alpha = 0.92$ ).

**Behavioral Intentions.** Three items measured intentions to use the Web site in the future ( $\alpha = 0.95$ ; e.g., "I would use this website to purchase a CD"). Items were rated on a 5-point scale ranging from "totally disagree" to "totally agree" and the mean score on these items was used as a dependent variable in the analyses.

**Attitude Toward the Online Retailer.** Participants were asked to fill out a 5-item semantic differential scale to assess attitude toward the online retailer. Sample items were "incredible-credible," "attractive-unattractive," and "uninteresting-interesting" ( $\alpha = 0.92$ ). Items were measured on a 5-point scale and the mean score on these 5 items was used as the dependent variable in the analyses.

**Assessment of Control Variables.** Differences in prior online purchase behavior, educational level, Internet access, and frequency of Internet usage were measured for exploratory reasons to assess their impact on the consumers' risk perceptions and attitudes toward the Web site and the online retailer.

### **Results**

No correlations were found between the dependent measures and all the assessed control variables, except for frequency of Internet usage. Participants who used

**TABLE 3**

Correlations Between Assessed Frequency of Internet Usage and the Dependent Measures (Main Study)

	FREQUENCY OF INTERNET USAGE
Risk perception	-0.014
Attitude toward the Web site	-0.207*
Chen & Wells scale	-0.261**
Behavioral intentions	-0.213*
Attitude toward the online retailer	-0.219*

\* $p < 0.05$  (two-tailed).  
 \*\* $p < 0.01$  (two-tailed).

the Internet more frequently had lower scores on the attitudinal and behavioral intentions scales (see Table 3).

**Manipulation Checks.** Five participants did not complete the regulatory focus manipulation questions. These participants were excluded from further analyses. (Including these participants did not substantially affect the results.) Second, analysis of variance showed that, as intended, the prevention compatible Web site with safety cues was perceived as safer than the Web site with non-safety cues [ $F(1,117) = 56.66, p < 0.001, \eta_p^2 = 0.33; M_{\text{safety}} = 3.70, SD = 1.01$  vs.  $M_{\text{non-safety}} = 2.30, SD = 1.01$ ]. Furthermore, analyses of variance showed that the Web site containing safety cues was perceived as relatively more secure [ $F(1,117) = 67.62, p < 0.001, \eta_p^2 = 0.37; M_{\text{safety}} = 3.79, SD = 1.12$  vs.  $M_{\text{non-safety}} = 2.24, SD = 0.93$ ] and relatively more protected [ $F(1,117) = 68.54, p < 0.001, \eta_p^2 = 0.37; M_{\text{safety}} = 3.84, SD = 1.08$  vs.  $M_{\text{non-safety}} = 2.32, SD = 0.93$ ]. Hence, the Web content was successfully manipulated.

**Risk Perception.** To test whether Web content that fits consumers' prevention focus reduces consumers' risk perceptions a 2 (regulatory focus: promotion vs. prevention) by 2 (Web content: safety cues vs. non-safety cues) ANOVA was performed, with risk perceptions as the dependent variable. This analysis showed a main effect for regulatory focus [ $M_{\text{prevention}} = 2.64, SD = 1.10$  vs.  $M_{\text{promotion}} = 3.05, SD = 0.73; F(1,115) = 8.02,$

**TABLE 4**

Mean Scores and Standard Deviations on Risk Perception as a Function of Regulatory Focus and Web Content (Main Study)

	PREVENTION		PROMOTION	
	SAFETY	NON-SAFETY	SAFETY	NON-SAFETY
Risk perception	1.89 <sub>a</sub>	3.39 <sub>b</sub>	2.97 <sub>a</sub>	3.13 <sub>a</sub>
SD	0.82	0.83	0.72	0.74

Note: Means with a different subscript (for each regulatory focus condition) differ significantly from each other at the 0.001 level. Safety = Web content with safety cues. Non-safety = Web content with non-safety cues.

$p < 0.01, \eta_p^2 = 0.07$ ] and for Web content [ $M_{\text{safety}} = 2.43, SD = 0.93$  vs.  $M_{\text{non-safety}} = 3.26, SD = 0.79; F(1,115) = 33.41, p < 0.001, \eta_p^2 = 0.23$ ]. More important, these main effects were qualified by the expected interaction effect between regulatory focus and Web content [ $F(1,115) = 21.54, p < 0.001, \eta_p^2 = 0.16$ ; see Table 4]. Simple effects analysis revealed that the impact of safety cues was significant for participants in the prevention focus [ $F(1,115) = 52.91, p < 0.001, \eta_p^2 = 0.32$ ], but not for participants in the promotion focus condition [ $F(1,115) < 1$ ].

**Attitude Toward the Web Site and Behavioral Intentions.** To test whether Web content that fits consumers' prevention focus engenders a relatively positive attitude toward the Web site and relatively high behavioral intentions, a 2 (regulatory focus: promotion vs. prevention) by 2 (Web content: safety cues vs. non-safety cues) MANCOVA was conducted, with the mean scores on the attitude toward the Web site, the concise Chen and Wells scale, and the behavioral intentions scale as dependent variables. Since frequency of Internet usage correlated with the attitudinal and behavioral intentional measures, this variable was added to the analysis as a covariate. Apart from a significant impact of frequency of Internet usage [Wilk's lambda  $F(3,112) = 2.82, p < 0.05, \eta_p^2 = 0.07$ ], the MANCOVA revealed a significant main effect for Web content [Wilk's lambda  $F(3,112) = 8.21, p < 0.001, \eta_p^2 = 0.18$ ] and a significant interaction effect between regulatory focus and Web content [Wilk's lambda  $F(3,112) = 10.53, p < 0.001, \eta_p^2 = 0.22$ ]. Univariate analyses of variance were used to assess the distinct effects for each dependent variable. These

**TABLE 5**

Mean Scores and Univariate Interaction Effects Between Regulatory Focus and Web Content on Attitude Toward the Web Site and Behavioral Intentions (Main Study)

	PREVENTION		PROMOTION		INTERACTION <i>F</i> (1,114)	$\eta_p^2$
	SAFETY	NON-SAFETY	SAFETY	NON-SAFETY		
Attitude	3.82 <sub>a</sub>	2.04 <sub>b</sub>	2.70 <sub>a</sub>	2.83 <sub>a</sub>	27.42*	0.19
SD	1.20	0.94	1.01	0.86		
Chen & Wells scale	3.49 <sub>a</sub>	2.46 <sub>b</sub>	2.81 <sub>a</sub>	2.97 <sub>a</sub>	29.04*	0.20
SD	0.65	0.69	0.57	0.53		
Behavioral intentions	3.65 <sub>a</sub>	2.01 <sub>b</sub>	2.56 <sub>a</sub>	2.81 <sub>a</sub>	21.94*	0.16
SD	1.33	1.07	1.06	1.01		

Note: Means in the same row with a different subscript (for each regulatory focus condition) differ significantly from each other at the 0.05 level. Safety = Web content with safety cues. Non-safety = Web content with non-safety cues .

\* $p < 0.001$ .

analyses revealed main effects of Web content for the general attitude toward the Web site scale [ $F(1,114) = 20.29, p < 0.001, \eta_p^2 = 0.15$ ], the concise Chen and Wells scale [ $F(1,114) = 15.56, p < 0.001, \eta_p^2 = 0.12$ ], and the behavioral intentions scale [ $F(1,114) = 11.65, p < 0.001, \eta_p^2 = 0.09$ ]. More important, these analyses revealed that the main effects were qualified by the expected interaction effect between regulatory focus and Web content (see Table 5). Simple effects analysis revealed that the impact of safety cues on the three dependent variables was significant for participants in the prevention focus [ $F_{Attitude}(1,114) = 46.22, p < 0.001, \eta_p^2 = 0.29; F_{Chen\&Wells}(1,114) = 42.39, p < 0.001, \eta_p^2 = 0.27; F_{Behavioral\ intentions}(1,114) = 31.91, p < 0.001, \eta_p^2 = 0.22$ ], but not for participants in the promotion focus condition (all  $F$ s  $< 1$ ).

**Attitude Toward Online Retailer.** To test whether Web content that fits consumers' prevention focus engenders a relatively positive attitude toward the online retailer, a 2 (regulatory focus: promotion vs. prevention) by 2 (Web content: safety cues vs. non-safety cues) ANCOVA was conducted, with the mean score on the attitude toward the online retailer scale as dependent variable. Again, frequency of Internet usage was added as a covariate. Apart from a significant impact of frequency of Internet usage [ $F(1,114) = 5.23, p < 0.05, \eta_p^2 = 0.04$ ], the analyses revealed a significant main effect for Web content [ $F(1,114) = 14.79, p < 0.001, \eta_p^2 = 0.12$ ]. More important, this

effect was qualified by the expected interaction effect between regulatory focus and Web content [ $F(1,114) = 24.77, p < 0.001, \eta_p^2 = 0.18$ ; see Table 6]. Simple effects analysis revealed that the impact of safety cues was significant for participants in the prevention focus [ $F(1,114) = 37.89, p < 0.001, \eta_p^2 = 0.25$ ], but not for participants in the promotion focus condition [ $F(1,114) < 1$ ].

**GENERAL DISCUSSION**

The aim of this research was to create a better understanding of online consumer behavior by applying the principle of regulatory fit (Higgins, 2000). Earlier

**TABLE 6**

Mean Scores and Standard Deviations on Attitude Toward the Online Retailer as a Function of Regulatory Focus and Web Content (Main Study)

	PREVENTION		PROMOTION	
	SAFETY	NON-SAFETY	SAFETY	NON-SAFETY
Attitude toward the online retailer	3.76 <sub>a</sub>	2.27 <sub>b</sub>	2.85 <sub>a</sub>	3.04 <sub>a</sub>
SD	1.02	0.82	0.71	0.66

Note: Means with a different subscript (for each regulatory focus condition) differ significantly from each other at the 0.05 level. Safety = Web content with safety cues. Non-safety = Web content with non-safety cues.

research showed that the online shopping environment induces a prevention focus (van Noort, Kerkhof, & Fennis, 2007), demonstrated that a prevention focus initiates a preference for reliability-related information (Chernev, 2004), and argued that a prevention focus fosters a preferential search for information related to security and protection (Pham & Higgins, 2005). The current research aimed to extend our knowledge of the consequences of a prevention focus in online shopping environments and to explain the persuasiveness of online safety cues. It was predicted that the impact of online safety cues is moderated by the consumers' regulatory focus. Two experimental studies tested the effects of regulatory focus compatibility of Web content on online consumer behavior, for two different types of online stores (i.e., music store and travel agency). In both studies, prevention-focused individuals presented with a safety-oriented online shopping environment showed lower levels of risk perception. Moreover, in the second study we reported positive effects of regulatory fit on risk perception, multiple attitudinal measures, and behavioral intentions. Prevention-focused consumers showed more favorable attitudes toward the Web site and the online retailer when presented with safety-oriented Web content. In contrast, promotion-focused consumers did not differ in their reaction to Web content that either did or did not contain safety cues.

A main contribution of the present research to theoretical development is its demonstration of the interaction between online safety cues and consumers' regulatory focus. The results provide evidence that the persuasiveness of online safety cues depends on consumers' regulatory goals—specifically, that a regulatory fit (Higgins, 2000) between Web content and consumers' prevention focus positively influences consumers' responses. Findings are consistent with the findings that prevention-focused consumers are more receptive to reliability-related information (Chernev, 2004) and with the suggestion that a prevention focus fosters a preference for security-related information (Pham & Higgins, 2005).

The present research contributes to our existing knowledge of online consumer behavior in several ways. First, the main body of online consumer behavior research has focused on examining antecedents of online shopping adoption and showed that online

shopping goals differ from shopping goals in conventional shopping formats (e.g., Alba et al., 1997). The present research suggests that these different goals are consequential during the online shopping process. More specifically, the present research examined consequences for the online shopping process by studying the role of regulatory goals in the persuasiveness of online safety cues. Second, this research contributes to our understanding of the role of risk perception in online consumer behavior. While prior research extensively studied online risk perceptions as an independent variable that influences consumers' online shopping adoption, the current research is based on the assumption that online risk perceptions are consequential for self-regulatory goals and clearly shows how these goals affect online consumer behavior. Therefore, this research demonstrates that risk perception is more than a predictor of the intention to shop online and has an important role in the online shopping process.

Since the significance of the results hinges on the assumption that online shopping is perceived as risky, an important question is whether the reported effects are temporal or enduring over time. Although it is well reported that risk perceptions are the main barrier for online shopping (e.g., Pavlou, 2003) and recent research has shown that consumers perceive more risks in online than in offline shopping environments (van Noort, Kerkhof, & Fennis, 2007), it is unclear whether the risky nature of Internet is here to stay or will decrease over time. Taking on the perspective of the Diffusion of Innovation theory (Rogers, 1995), one could argue that the findings of the cited studies will only hold in the near future and are less prevalent in the longer run because individuals will have more and more positive experiences with online shopping, will become comfortable with the Internet as a shopping medium, and might therefore become less skeptical toward online shopping and perceive less online shopping risk. Furthermore, some specialists see the security issue of e-commerce being resolved in the near future (e.g., Bhimani, 1996). Reduction in safety concerns might be one of several possibilities accounting for this trend; other possibilities being for instance an increase in the amount and volume of novel consumer markets that are penetrated by online shopping outlets, or an increase in the number of active outlets on the Internet. It might well be that the trust in the

system will increase over time and that consumers will become confident about online shopping. However, following Tan and Thoen (2000), the level of consumers' trust in online transactions is determined by the sum of the trust in the other party (i.e., online store) and trust in the system (i.e., Internet). Thus, if consumers' trust in the system increases over time, there is a chance that risk perceptions may become less prevalent in online consumer behavior. However, financial risk is only one of the dimensions of risk perception. Product or performance risk is another key dimension of risk perception in the online store (e.g., Featherman & Pavlou, 2003; Forsythe, Liu, Shannon, & Gardner, 2006). Since physical presence is lacking online, consumers cannot personally examine the product and therefore perceive the risk that the product will not completely meet one's expectations upon delivery (e.g., Gupta, Su, & Walter, 2004; Weathers & Makienko, 2006). This dimension of risk will exist as long as the virtual representation of products does not enable consumers to examine and test the product to the same extent as conventional shopping contexts do.

Taking on the perspective of RFT (Higgins, 1997), the regulatory focus compatibility of Web content becomes more and more important. According to RFT, an individual tends to use a strategy towards a goal that proved to be successful. So, once an online purchase is conducted with a prevention strategy focused on preventing negative outcomes, and the purchase turns out to be successful (e.g., the product arrived in time, no additional costs were surcharged, the product did meet expectations), future online purchases will also be conducted with a prevention focus. Also, if the online purchase turns out to be unsuccessful using a given prevention-focused strategy, an online consumer might try alternative prevention strategies to prevent the negative outcome in future online purchases. From this point of view, the current findings are far from temporary and the fit between consumers' prevention focus and Web content becomes increasingly important, after both positive and negative experiences with online shopping.

### **Research Opportunities**

Future research should address the role of past learning/experience. First, the relationship between frequency of prior online experience and consumer

responses important for interactive marketing should be addressed, since this paper reported that prior Internet usage acts as a covariate with attitudes and behavioral intentions. In particular, the findings demonstrated that more frequent Internet users report lower scores on attitudinal and intentional measures (but not on risk perception). Multiple explanations for the negative correlation are possible, such as that more frequent Internet users have higher expectations of a Web site, for example, considering the interactivity. As the current studies used static images of Web sites, more frequent users might evaluate the Web sites as less positive because of the absence of animation. Another possible explanation is that more frequent users have more negative prior experiences with online shopping, resulting in relatively less favorable attitudes and intentions. Future research should try to disentangle these possibilities about the role of prior online experience in online consumer behavior. Second, the moderating role of valence of prior online experience should be addressed. In line with Frambach, Roest, and Krishnan (2007), it could be hypothesized that the valence of prior online experience or the frequency of favorable prior online experience can moderate the persuasiveness of online (safety) information. More specifically, consumers with favorable prior online experience might pay less attention to and might consider online safety information as less relevant, compared to consumers with unfavorable experiences. Third, future research should examine the role of prior online experience in how online risk perceptions develop over time. As reported in this paper, individual background variables such as frequency of Internet usage, prior online purchase behavior, and Internet access did not correlate with consumers' risk perceptions. In prior research the effects of either Internet experience or online shopping experience on risk perceptions were not unequivocal. Bhatnagar, Misra, and Roa (2000), for example, showed that individuals who spend more time online do perceive more online financial risks. In line with these results, Liang and Huang (1998) demonstrated that experienced online shoppers are more concerned with the uncertainty inherent in electronic shopping. However, Kuhlmeier and Knight (2005) demonstrated that frequency of Internet use is not particularly important as an antecedent of perceptions of online risk. Also, Kim, Cho, and Rao (2000) found that the effect of an Internet-oriented lifestyle

on perceived online risks is not significant. In line with these findings, the results of the present research failed to show significant correlations between background variables related to online behavior and online risk perceptions. Therefore, future research could focus on resolving the underpinnings of these mixed results. Possibly, meta-analyses on the research conducted so far would help to answer these questions.

Another suggestion for future research is to examine the possibility of a reciprocal relationship between risk perception and regulatory focus. The current studies showed mixed results for the main effects of regulatory focus. In the pilot study, no main effect of regulatory focus on risk perception was found, whereas the main study did demonstrate a main effect on risk perception. More specifically, participants in the prevention focus condition reported lower risk perception. This effect is probably counterintuitive, since one might hypothesize that prevention focus initiates a risk perception because they are conceptually related—both concepts are concerned with negative outcomes. Indeed, prior research showed a relationship between risk perception and prevention focus. Van Noort, Kerkhof, and Fennis (2007) demonstrated that risk perceptions mediate the effect of the risky nature of the online shopping environment on prevention focus. The current findings do not show that a prevention focus initiates higher levels of risk perception, indicating that the relationship between risk perception and prevention focus is not reciprocal. Future research could use longitudinal designs to examine the extent of reciprocity between both constructs more in detail.

Some other suggestions for future research concern the methodology used in this research. First, the primary objective of this research was to assess the role of consumer prevention focus as a critical factor in online shopping behavior. Therefore, this research focused on prevention related online cues (i.e., safety cues) and did not elaborate on the nature of non-safety cues. However, the specific nature of non-safety cues might be particularly effective under conditions of a salient consumer promotion focus. Future research should investigate whether promotion-focused goals are important in online consumer behavior and to what extent online consumers can be persuaded by promotion-oriented stimuli. Second, in both studies

Web sites were used as static images with no interactive features; individuals could not browse on the Web site, for instance. For measuring risk perceptions, attitudes, and behavioral intentions, this type of stimulus material was perfectly suitable and sufficient. However, to be able to extend the current findings by measuring different types of consumer responses, it is recommendable to replicate this study with more dynamic Web sites where individuals can fully use all interactive features. In such a research setting, click-through behavior could be analyzed to test whether regulatory focus influences consumers' preference for certain online informational cues and interactive features. Third, the persuasiveness of online safety cues is tested using an experimental design in which effects of Web sites with and without safety cues are measured. In real-life settings, Web sites contain both safety and non-safety cues. Interesting questions concern whether one single safety cue is enough to persuade consumers to buy online or whether there should be a minimum level of safety cues, and which online safety cues are most persuasive. To answer these questions, future research could either use different experimental designs or use real Web sites. Fourth, although multiple attitudinal measures were used, and both consumers' attitude and behavioral intentions are good predictors of purchase behavior, one could argue that there is a gap between attitudes and intentions on the one hand and actual behavior on the other hand (for an overview of the attitude-behavior relationship, see Glasman & Albarracín, 2006). That individuals do not always act in accordance with their intentions is a common observation, and research has shown that behavioral intentions and patterns are not always unequivocally consistent with attitudes (e.g., Vermeir & Verbeke, 2006). However, recent research on the predictive power of attitudes for behavior in the online shopping domain has demonstrated that attitudes are significant predictors of online buying behavior (Yang, Lester, & James, 2007). Thus, although there might be a gap between attitudes or intentions on the one side and behavior on the other side, these results confirm that attitudes are predictive for behavior in the domain of online consumer behavior. Nevertheless, an extension of the current studies is recommended, with more explicit dependent variables such as a real online purchase or click-through behavior (as a measure for information preference).

Future research could also focus on the moderating role of reputation of the online retailer. One could argue that a sound and reliable reputation lowers the importance of the use of online safety cues in the online purchase context. Furthermore, the current studies were conducted using Web sites for an online travel agency and an online music store. Both CDs and holidays or airplane tickets are frequently purchased on the Internet, and the current studies show that even for these products regulatory fit is important in explaining online consumer behavior. One could argue that the regulatory fit between consumers' prevention focus and Web content is an even more important predictor of online consumer behavior for products that are less commonly purchased on the Internet.

Another topic that should be addressed in future research is the nature of consumers' beliefs about the presence of the safety cues (i.e., why are safety cues present on the Web sites?). Presence of safety cues might be perceived as extra promises made by the online retailer, but might also make consumers more suspicious if they believe that these cues are only there because prior consumers used them frequently with that retailer. Thus, beliefs about the safety cues can influence risk perceptions. It would also be interesting to examine whether belief systems of online safety cues are consistent with motivations or persuasion goals of online retailers.

### ***Practical Implications***

In terms of practical implications for consumer psychology and behavior, the current studies show that the use of safety cues in online purchase environments influences risk perception, the evaluation of the Web site and the online retailer, and also the consumption of products. Together with the earlier finding that an online shopping environment tends to initiate a prevention focus (van Noort, Kerkhof, & Fennis, 2007), the current findings imply that it is important to design Web content that fits the consumer prevention focus. Although the natural tendency of a marketer might be to advertise positive features of products and services, the current findings indicate that individuals are more easily persuaded by safety-oriented online information. Therefore, it might be sensible to emphasize safety and protective features, since these features fit the prevention

focus. E-commerce should anticipate this when designing Web content.

Since ample research has shown that risk perceptions are an impediment to the growth of e-commerce (e.g., Miyazaki & Fernandez, 2001), it is crucial for online marketers to eliminate consumers' concerns about safety and security. The current findings show that safety cues are successful in reducing risk perceptions regarding online shopping. An implication that derives from current findings is that it is always safer for online marketers to use online safety cues. Furthermore, since the reliance on safety cues is only one of the risk reducing strategies (Derbaix, 1983) that can influence risk perceptions and purchase behavior (Dowling & Staelin, 1994), Web content should cater to the consumer needs for safety and security not only by providing the consumer with online safety cues, but also by providing other risk relievers. Online advertising texts for products and services should also be designed to be compatible with the relevant focus because product features and advertising arguments compatible with the focus are more convincing or more relevant for consumers (e.g., Chernev, 2004; Werth & Förster, 2006). Creating Web content that meets consumers' prevention focus in all its aspects is considerably more effective.

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